

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of :  
 Hironori OMURA et al. : **Mail Stop: PCT**  
 Serial No. 10/540,025 : **Attorney Docket No. 2005\_1035A**  
 Filed June 22, 2005 :

**COENZYME-BINDING GLUCOSE DEHYDROGENASE**  
**[Corresponding to PCT/JP2003/016603**  
**Filed December 24, 2003]**

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, VA 22313-1450

Sir:

Pursuant to the provisions of 37 CFR 1.56, 1.97 and 1.98, Applicants request consideration of the references listed on attached form PTO-1449 and any additional information identified below in paragraph 3. A legible copy of each reference listed on the Form PTO-1449 is enclosed, except a copy is not provided for:

- ☒ each U.S. Patent and U.S. Patent application publication;
- ☐ each reference previously cited in the international application PCT/\_\_\_\_\_; and/or
- ☐ each reference previously cited in prior parent application Serial No. \_\_\_\_\_.

1a. ☒ This Information Disclosure Statement is submitted:

within three months of the filing date (or of entry into the National Stage) of the above-entitled application, or

before the mailing of a first Office Action on the merits or the mailing of a first Office Action after the filing of an RCE,

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TG/

**and thus no certification and/or fee is required.**

- 1b. ☐ This Information Disclosure Statement is submitted

after the events of above paragraph 1a and prior to the mailing date of a final Office Action or a Notice of Allowance or an action which otherwise closes prosecution in the application, and thus:

- (1) ☐ the certification of paragraph 2 below is provided, **or**  
 (2) ☐ the fee of \$180.00 specified in 37 CFR 1.17(p) is enclosed.

- 1c. ☐ This Information Disclosure Statement is submitted:

after the mailing date of a final Office Action or Notice of Allowance or action which otherwise closes prosecution in the application, and prior to payment of the issue fee, and thus:

**the certification of paragraph 2 below is provided, and  
 the fee of \$180.00 specified in 37 CFR 1.17(p) is enclosed.**

2. It is hereby certified

- a. ☐ that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the Statement, or
- b. ☐ that no item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing the certification after making reasonable inquiry, was known to any individual designated in §1.56(c) more than three months prior to the filing of the Statement.

3. ☐ Consideration of the following list of additional information (including any compending or abandoned U.S. application, prior uses and/or sales, etc.) is requested.

4. For each non-English language reference listed on the attached form PTO-1449, reference is made to:
- a. ☐ a full or partial English language translation submitted herewith,
  - b. ☐ a foreign patent office search report (in the English language) submitted herewith,
  - c. ☐ the concise explanation contained in the specification of the present application at page,
  - d. ☐ the concise explanation set forth in the attached English language abstract,
  - e. ☐ the concise explanation set forth below or on a separate sheet attached to the reference:
5. ☐ A foreign patent office search report citing one or more of the references is enclosed.

Respectfully submitted,

Hironori OMURA et al.

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October 12, 2005

FORM PTO 1449 (modified)

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICELIST OF REFERENCES CITED BY APPLICANT(S)  
(Use several sheets if necessary)

Date Submitted to PTO: October 14, 2005

ATTY DOCKET NO.  
2005\_1035ASERIAL NO.  
10/540,025APPLICANT  
Hironori OMURA et al.FILING DATE  
June 22, 2005

GROUP

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA	6,103,509	8/2000	Sode			Corresponds to AG
	AB						
	AC						
	AD						
	AE						

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
	AF	2002-526759	8/2002	JP			Abstract
	AG	10-243786	9/1998	JP			
	AH	1 176 202	1/2002	EP			Corresponds to AI
	AI	2001-197888	7/2001	JP			
	AJ	1 167 519	1/2002	EP			Corresponds to AK
	AK	2000-350588	12/2000	JP			
	AL	2001-346587	12/2001	JP			Abstract

## OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

AM	K. Matsushita et al., "Membrane-bound D-Glucose Dehydrogenase from <i>Pseudomonas</i> sp.: Solubilization, Purification and Characterization", Agric. Biol. Chem., Vol. 44, No. 7, pp. 1505-1512, 1980.
AN	M. Ameyama et al., "D-Glucose Dehydrogenase of <i>Gluconobacter suboxydans</i> : Solubilization, Purification and Characterization", Agric. Biol. Chem., Vol. 45, No. 4, pp. 851-861, 1981.
AO	M. Ameyama et al., "Purification and Characterization of the Quinoprotein D-Glucose Dehydrogenase Apoenzyme from <i>Escherichia coli</i> ", Agric. Biol. Chem., Vol. 50, No. 1, pp. 49-57, 1986.
AP	P. Dokter et al., "The <i>in vivo</i> and <i>in vitro</i> substrate specificity of quinoprotein glucose dehydrogenase of <i>Acinetobacter calcoaceticus</i> LMD 79.41", FEMS Microbiology Letters, Vol. 43, pp. 195-200, 1987.

EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609, Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TG/

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	BA						
	BB						
	BC						

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
	BD						

## OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

BE	S. Igarashi et al., "Construction and Characterization of Mutant Water-Soluble PQQ Glucose Dehydrogenases with Altered $K_m$ Values-Site-Directed Mutagenesis Studies on the Putative Active Site", Biochemical and Biophysical Research Communications, Vol. 264, pp. 820-824, 1999.
BF	K. Sode et al., "Improved substrate specificity and dynamic range for glucose measurement of <i>Escherichia coli</i> PQQ glucose dehydrogenase by site directed mutagenesis", Biotechnology Letters, Vol. 19, No. 11, pp. 1073-1077, November 1997.
BG	G. E. Cozier et al., "Characterization of the membrane quinoprotein glucose dehydrogenase from <i>Escherichia coli</i> and characterization of a site-directed mutant in which histidine-262 has been changed to tyrosine", Biochem. J., Vol. 340, pp. 639-647, 1999.
BH	K. Hayano et al., "Purification and Properties of 3-Ketosucrose-forming Enzyme from the Cells of <i>Agrobacterium tumefaciens</i> ", The Journal of Biological Chemistry, Vol. 242, No. 16, pp. 3665-3672, August 25, 1967.
BI	W. Tsugawa et al., "Fluorescent measurement of 1,5-anhydro-D-glucitol based on a novel marine bacterial glucose dehydrogenase", Enzyme and Microbial Technology, Vol. 22, pp. 269-274, 1998.
BJ	S. C. Morrison et al., "Characterization of a glucose 3-dehydrogenase from the cultivated mushroom ( <i>Agaricus bisporus</i> )", Appl. Microbiol. Biotechnol., Vol. 51, pp. 58-64, 1999.
BK	T. Bak, "Studies on Glucose Dehydrogenase of <i>Aspergillus oryzae</i> II. Purification and Physical and Chemical Properties", Biochim. Biophys. Acta, Vol. 139, pp. 277-293, 1967.
BL	T. Bak, "Studies on Glucose Dehydrogenase of <i>Aspergillus oryzae</i> III. General Enzymatic Properties", Biochim. Biophys. Acta, Vol. 146, pp. 317-327 1967.
BM	T. Bak, "Studies on Glucose Dehydrogenase of <i>Aspergillus oryzae</i> IV. Histidyl Residue as an Active Site", Biochim. Biophys. Acta, Vol. 146, pp. 328-335, 1967.

EXAMINER /Tiffany Gough/

DATE CONSIDERED

05/20/2008